

## ECONOMIC SCENE

# Do workers really make hay while the sun shines, or just clock out sooner?

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A CORE tenet of supply-side economics is that people will work more if their take-home pay rate rises.

Support for this proposition has proved surprisingly difficult to find, however, especially in regard to men.

Studies of annual hours worked among individuals turn up a wide range of estimates of the effects, but typically indicate that work hours are only weakly associated with pay. To the extent there is a consensus among economists -- and there is more than the usual amount of disagreement here -- it is that a 10 percent rise in wages leads to less than a 1 percent increase in work hours for men and a 3 percent increase for women.

With such small responses, tax cuts clearly will not pay for themselves.

Why is the supply of labor so unresponsive to pay? Two theoretical effects work in opposite directions. On the one hand, workers substitute more hours at work for time spent in leisure if the wage rate rises, as leisure time has become relatively more expensive. This is known as the substitution effect. On the other hand, if workers are paid more, they like to use their extra income to consume more of the things they enjoy, including leisure time. This is known as the income effect. The income and substitution effects roughly offset each other.

Another factor is that many employers dictate the number of hours employees must work, so they cannot work more or fewer hours if they want to. And, of course, in a weak economy unemployment prevents some people from working at all.

Still, in certain situations, a sizable supply response is expected. Obviously, workers must have the flexibility to adjust their hours. In addition, if wage increases are known to be temporary, the substitution effect will loom large, and the income effect will be insignificant because lifetime income is hardly affected.

For example, if pay is expected to be exceptionally high on Thursday, and Thursday only, then workers should work extra-long hours on Thursday; they can rest on Friday. Thus, "intertemporal substitution" of work effort across days should occur in response to transitory wage changes.

Nevertheless, most studies of transitory wage changes have found only limited evidence of such behavior.

In a 1997 study, Colin Camerer of the California Institute of Technology and three colleagues posed a novel explanation for this anomaly: maybe many workers are "target income" earners. That is, workers have in mind a target for what they want to earn on a given day, and once they reach that level they go home. So a higher wage would cause some workers to quit earlier rather than work harder, because they would achieve their target income faster.

To test this view, they collected data on taxi drivers in New York City. On days when fares per hour worked were higher -- for example, if waiting time between trips was low because of a convention -- they found that the average cabdriver worked less, not more. This looked like stunning support for the target-income model, and a rejection of the intertemporal substitution model.

For drivers with a lot of experience, however, they found that work effort increased on especially profitable days, suggesting that workers learn over time.

Now their findings are being debated. First, Gerald S. Oettinger of the University of Texas at Austin published a paper

in the Journal of Political Economy on the daily work decisions of food and beverage vendors at a major-league baseball stadium. The vendors were independent contractors, required to work until the seventh inning, but they could choose which games to work. Vendors make more when the number of fans is high and the number of other vendors is low. Professor Oettinger found that vendors were more likely to go to work when the expected payoff was higher -- for example, on days when a larger crowd was expected because of a pivotal game or a quality opponent. The decision of whether to work at all on a high-payoff day -- as opposed to how much to work -- was not considered in the cabdriver study.

Then, an actual experiment was conducted by Ernst Fehr and Lorenz Gotte, two economists at the University of Zurich. They persuaded Flash Delivery Services, a bicycle messenger company in Zurich, to raise the commission rate paid per delivery by 25 percent during a preannounced four-week window for a randomly chosen half of its work force in September 2000, and for the other half two months later. The researchers found that messengers worked 20 percent more shifts when their commission rate was raised, although they put forth somewhat less effort per shift, as measured by the number of deliveries. Over the month when pay was elevated, total work effort was higher, consistent with the notion of intertemporal substitution of work for leisure.

And most recently, my Princeton colleague Henry S. Farber revisited the question of cabdrivers, studying a different set of drivers. He found that cabdrivers quit after they work a lot of hours and grow weary. How much they have earned to that point has little or nothing to do with their decision. Moreover, the amount the drivers earn varies substantially from day to day, suggesting that their target income levels, if they have them, fluctuate wildly. He suggests that the earlier findings possibly resulted from reporting errors in the data: because daily wages were derived by dividing total revenue by hours worked, any mistake in reported hours would cause a mistake in the opposite direction in the calculated wage, inducing a negative correlation between wages and hours worked.

So where does this leave us? Perhaps most important, a distinction must be drawn between permanent and transitory changes in pay. For long-term changes -- like the decline in fares cabdrivers saw after the terrorist attacks of Sept. 11, 2001, discouraged tourists from visiting New York -- Professor Farber says he would not be surprised if drivers actually worked more hours to make up, in part, for lost income.

There is little reason to believe recently enacted tax cuts will increase work effort if they are perceived as permanent. In fact, if the tax cuts are repealed, work effort will probably increase before the repeal takes effect, at least among those with flexible schedules and much experience.